



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,149	06/25/2003	Dae-Joung Kim	253/023	9890

7590 02/02/2004

LEE & STERBA, P.C.  
Suite 2000  
1101 Wilson Boulevard  
Arlington, VA 22209

EXAMINER

TSAI, H JEY

ART UNIT PAPER NUMBER

2812

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

10/602,149

Applicant(s)

KIM ET AL.

Examiner

H.Jey Tsai

Art Unit

2812

mw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/23/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

*Election/Restriction*

Applicant's election of group II invention (claims 1-5, not claims 1-15) is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Morikawa 5,308,682.

Morikawa discloses a method of forming a semiconductor device, which includes:

forming a first pattern 23a-23e (for first level wirings, col. 3, lines 30+ and col. 5, lines 66+, col. 6, lines 1+, figs. 2b or 3b-5f) for a semiconductor device in a semiconductor device formation region 11 of a semiconductor substrate 31 and simultaneously forming the first pattern 23a-23e in a first mark formation region 12 of the semiconductor substrate 31, figs. 1+,

forming a Second pattern 25a-25e for the semiconductor device on a resultant structure in the semiconductor device formation region 11 of the semiconductor substrate and simultaneously forming the second pattern 25a-25e (vernier) in a second mark formation region 12 of the semiconductor substrate 31, fig. 1+ and col. 3, lines 55+,

inspecting the first pattern in the first mark formation region and the second pattern in the second mark formation region for misalignments, col. 3, lines 60+ and col. 4, lines 1+ and col. 6, lines 13+, fig. 2a or 5b-5f,  
forming a scattering bar 25 (adjacent to 25a and 25e).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 is rejected under 35 U.S.C 103 as being unpatentable over Morikawa as applied to claims 1-2 and 4-5 above, and further in view of Shek 5,311,061 and Ikemasu et al. 5,580,812.

The difference between the references applied above and the instant claim(s) is:  
Morikawa does not teach using alignment check pattern in the memory device. However, Shek teaches at col. 1, lines 7+, col. 4, lines 16+ and figs. 1-5, using alignment keys for aligning a semiconductor substrate such as memory device. And, Ikemasu et al. teaches at col. 1, lines 42+, col. 8, lines 22+ and col. 10, lines 3+ and figs. 28A and 28B, a DRAM having forming a gate electrode (word line) made of polysilicon layer in forming an alignment mark portion 11C in scribe line area.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above references' teachings by using word line pattern in the DRAM cell region to form a second pattern in second mark formation region as taught by Sheck and Ikemasu et al. because word line (gate electrode) can be aligned by inspecting the second mark formation region that is formed in scribe line area.

**Any inquiry of a general nature or clerical matters or relating to the status of this application or proceeding should be directed to the Group customer service whose telephone number is (703) 306-3329 and Fax number (703) 872-9306. Group receptionist telephone number 703-308-0956.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Jey Tsai whose telephone number is (703) 308-1374. The examiner can normally be reached on from 7:00 Am to 4:00 Pm., Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone number for this Group is (703) 872-9306.

hjt

1/23/04



H. Jey Tsai  
Primary Examiner  
Patent Examining Group 2800